Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 - 15. (cancelled).

16. (previously presented) A method of image processing comprising the steps of:

spatially oscillating an image in one or more dimensions relative to a primary detector array sensitive to an input image so as to produce an image signal possessing a spatio-temporal motion signature of the induced oscillation;

feeding each of a secondary array of opponent center/surround detectors from one or more detectors from the primary detector array so as to extract improved contrast and motion information;

calibrating each detector in the primary and secondary detector arrays with respect to neighboring one or more detectors in the primary and secondary detectors using the image signal during the oscillation; and

filtering the image signal according to the spatio-temporal motion signature of the induced oscillation to extract those elements whose motions reflect the induced oscillation.

17. (previously presented) The method according to claim 16, wherein the spatial oscillation is provided by a swept-frequency sinusoid chirp.

18. (previously presented) The method according to claim 16, comprising extracting differential image information from the image.

19. (cancelled).

20. (currently amended) The method according to claim ~~19~~ 16, wherein the secondary detector comprises a plurality of opponent center/surround detectors, and

the filtering step comprises comprising increasing at least one of spatial and motion accuracy of the image detector by extracting phase information of elements of the image crossing secondary array detector boundaries of the opponent center/surround detectors to provide one or more of increased spatial accuracy and velocity accuracy.

21. (previously presented) The method according to claim 16, comprising detecting Doppler shifts of opponent crossing frequencies for extracting real-time velocity information of elements crossing secondary array detector boundaries during the induced oscillation.

22. (previously presented) The method according to claim 16, comprising timing detector crossings during periods in which no oscillation is induced, for extracting at least one of real-time position and velocity information of elements crossing secondary array detector boundaries during the induced oscillation.

23. (previously presented) The method according to claim 16, comprising performing a first coarse scan, and subsequently a finer scan of edges detected by the first coarse scan to provide improved imaging efficiency.

24. (previously presented) The method according to claim 16, comprising extracting real-time, systematic detector-to-detector sensitivity variation information from the image signal to provide relative calibration of the primary and secondary detector arrays.

25. (currently amended) The method according to claim ~~19~~ 16, wherein the filtering step comprises comprising suppressing between oscillation periods of the image detector an output of those of the detector elements reporting those of the opponent detectors indicating the latest positions of static edges of the image found during one of the induced oscillation periods, and increasing sensitivity of those of the detector elements reporting real motion of the image between the oscillation periods.

26. (previously presented) The method according to claim 16, further comprising extracting information pertaining to various motion spectra sampled at various orientations and/or scales of different textures exposed to the detector array, derived from the relative motions in each orientation, of the textures upon the detector array.

27 - 30. (cancelled)

31. (previously presented) The method according to claim 16, comprising limiting or preventing opponent detector saturation using the reference black surrounding the perimeter of the primary detector array.

32. (previously presented) The method according to claim 31, wherein the reference black is provided by a neutral density wedge surrounding the perimeter of the primary detector array.

33. (previously presented) The method according to claim 16, comprising chaining the detector arrays in groups separately chained in different orientations to provide a multi-resolution structure.

34. (cancelled).

35. (previously presented) The method according to claim 16, comprising measuring the induced oscillation.

36. (cancelled).

37. (previously presented) The method according to claim 24, wherein the extracted information is a measure of the local contrast and/or local velocity to provide for spatially adapting the sensitivity threshold of the primary detector array in real-time.